DOCUMENT RESUME

ED 382 190 IR 017 132

AUTHOR McCormack, Virginia
TITLE Training Preservice Teachers in Applying Computer Technology to Lesson Planning as a Component of the Elementary School Methods Curriculum.
PUB DATE 95
NOTE 67p.; Ed.D. Practicum, Nova Southeastern University.
PUB TYPE Dissertations/Theses - Practicum Papers (043) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Computer Uses in Education; *Educational Technology; Elementary Education; *Integrated Activities; Lesson Plans; *Multimedia Instruction; *Preservice Teacher Education; Pretests Posttests; Questionnaires; Teacher Attitudes; *Word Processing
IDENTIFIERS *Preservice Teachers

ABSTRACT

This practicum was designed to expand the preservice teacher's ability to understand and demonstrate the use of computers and new technologies in elementary school lesson planning. Teachers were expected to focus on acquiring skills to operate a computer, computer applications, and other technological resources as tools for learning and instructional practice during a 12-week period. Pre- and post-implementation questionnaires were administered to test teacher attitudes on recognizing, valuing and believing in the advantages of technology in the elementary classroom, especially in future lesson planning. A checklist of word processing skills was used to measure actual achievement. Questionnaire results showed that all participating preservice teachers valued and recognized technology use. Outcomes also revealed that all teachers were able to demonstrate their abilities in word processing and multimedia design in lesson planning. An analysis of data from the practicum indicated that with basic word processing, multimedia skills, and a hands-on approach, technology can be integrated with lesson planning. Data is illustrated in four tables. Appendices include: teacher questionnaires, word processing skills and multimedia knowledge checklists, and lesson plan checklists. Contains 40 references. (MAS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 382 190

Training Preservice Teachers in Applying Computer Technology to Lesson Planning As A Component Of The Elementary School Methods Curriculum

by

Virginia Mc Cormack

Cluster 64

A Practicum I Report presented to the
Ed.D. Program in Child and Youth Studies
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

NOVA SOUTHEASTERN UNIVERSITY

1995

IR017132

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Virginia McCormick
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

PRACTICUM APPROVAL SHEET

This practicum took place as described.

Verifier: Mary Lee Peck
Mary Lee Peck, Ph.D.

Associate Professor and Department Chair
Title

Ohio Dominican College-1216 Sunbury,Col.OH 43219
Address

4-10-95
Date

This practicum report was submitted by Virginia Mc Cormack under the direction of the advisor listed below. It was submitted to the Ed.D. Program in Child and Youth Studies and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

May 4, 1995
Date of Final Approval of Report

June S Delano
June Delano, Ph.D., Adviser

Acknowledgments

A special thanks to Dr. June Delano and Dr. Mary Ellen Sapp for helping me to successfully complete this practicum. I truly appreciate the constructive work both of them have provided.

Many thanks to Dr. Mary Lee Peck for her mentorship, support and encouragement, and her proactive stance of technological resources. Without her support for this practicum, I could not have experienced this dream of implementing technology into my course.

A special thanks goes to my mother, Gertrude Mc Cormack, and my father, Matt Mc Cormack, who have always valued education and inspired me to make a difference in the lives of children. Many thanks to my friends, who have been understanding and supportive to me in my work.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS iii

TABLE OF CONTENTS iv

ABSTRACT vi

Chapter

I INTRODUCTION 1

Description of Community 1
Writer's Work Setting and Role 2

II STUDY OF THE PROBLEM 5

Problem Description 5
Problem Documentation 7
Causative Analysis 8
Relationship of the Problem to the Literature 10

III ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS 18

Goals and Expectations 18
Expected Outcomes 18
Measurement of Outcomes 19
Discussion of Evaluation Instruments 20

IV SOLUTION STRATEGY 22

Discussion and Evaluation of Possible Solutions 22
Description and Justification for Solution Selected 23
Report of Action Taken 25

V RESULTS, DISCUSSIONS, AND RECOMMENDATIONS..... 35

Results..... 35
Discussion..... 36
Recommendations..... 40
Dissemination..... 42

REFERENCES..... 44

Appendices

A QUESTIONNAIRE ON RECOGNIZING AND VALUING TECHNOLOGY..... 50
B WORD PROCESSING SKILLS CHECKLIST..... 53
C MULTIMEDIA KNOWLEDGE AND SKILLS CHECKLIST..... 55
D PRESERVICE TEACHERS LESSON PLAN CHECKLIST..... 57
E CULMINATING TECHNOLOGY QUESTIONNAIRE..... 59

ABSTRACT

Training Preservice Teachers in Applying Computer Technology to Lesson Planning as a Component of the Elementary School Methods Curriculum. Mc Cormack, Virginia, F., 1995: Practicum I Report, Nova Southeastern University, Ed.D. Program in Child and Youth Studies. Teacher Education, Restructuring Curriculum, Technology, Preservice Teacher Training and Technological Strategies.

Preservice teachers applying technology to lesson planning is a practicum that was designed to expand the preservice teachers' ability to understand and demonstrate the use of computers and new technologies in elementary school lesson planning. The preservice teachers were expected to focus on acquiring skills to operate a computer, computer applications and other technological resources as tools for learning and instructional practice during a 12 week period.

The writer developed questionnaires prior and subsequent to implementation for preservice teachers; formulated a spiral bound computer manual; devised and reviewed checklists of skills to be achieved; coordinated a display and interaction with multimedia software; facilitated technology sessions; and served as a trouble shooter while preservice teachers integrated the slide show with lesson planning.

The outcomes from the practicum revealed that preservice teachers were able to demonstrate their abilities in word processing and multimedia design in lesson planning. An analysis of data from the practicum indicated that with basic word processing and multimedia skills and a hands-on approach, technology can be integrated with lesson planning.

****

Permission Statement

As a student in the Ed.D. Program in Child and Youth Studies, I do (✓) do not ( ) give permission to Nova Southeastern University to distribute copies of this practicum report on request from interested individuals. It is my understanding that Nova Southeastern University will not charge for this dissemination except to cover the costs of microfiching, handling and mailing of the materials.

7-10-95
(date)

Virginia Mc Cormack
(signature)

CHAPTER I

INTRODUCTION

Description of Community

The college is a small, Catholic, coeducational, liberal arts facility. Geographically, it is in a midwestern region and is located in an urban area within the capital city. Economically, it is situated in a low socio-economic area and revitalization efforts are underway. The student population has been drawn from within the urban area, the surrounding suburban, and rural towns, as well as from other cities within the state. Emphasis has been placed on cultural diversity and recruitment has highlighted new sources of enrollment from foreign countries and the diverse populations from other states. Therefore, enrollment has been comprised of a sizable percentage of Native Americans, African Americans and Hispanics and Asians.

The college has several buildings that house administrative offices, art classrooms, science laboratories, a library, athletic facilities, student services, food services and two dormitories. The computer lab has been equipped with 40 computers, a video disc player, CD-ROM's and limited application software in the library. A grant has been received and financial allocations will purchase new and additional resources. A task force has been selected to determine long-term learning needs in relationship with the integration of technology in all courses in the college.

The college has been influenced by the surrounding major colleges and universities. The small size and personalized attention to individual needs has advanced the college programs especially in education and business. The weekend college program has been growing as many older individuals are pursuing undergraduate degrees. Input and collaboration with area colleges and universities has brought about several organizations that promote a solid focus on the needs in education today and the emphasis for the twenty-first century.

Writer's Work Setting and Role

The college's primary mission has been to provide undergraduate and continuing education programs for the intellectual development of each

student with equity for all ages, gender, ethnicity, religious affiliations and socio-economic backgrounds. Numerous preservice teachers have transferred from larger institutions and need special attention placed on the course work already accomplished. Most of the students have been of non-traditional age, either holding an undergraduate degree in another discipline or have started a degree in the past and have not been able to complete that degree. Due to the cost of education and living, most preservice teachers have maintained a full or part time job. The scheduling of classes has become crucial to the education and employment of the students. Innumerable preservice teachers have been given the opportunity to acquire college credits through experiential learning testing and college level examinations to receive credit for work completed outside of the formal academic process.

The Education Department has become the department with the largest number of students. Seven full time faculty members and approximately 15 adjuncts have served in the department. Over 600 students have been enrolled as education majors in early childhood education, elementary education, secondary education and special education. Field placements have encompassed more than 15 school districts.

The writer's role was that of instructor and supervisor in the Elementary Education Department of the college. The writer has taught Elementary School Methods I and II. The field experience supervision for preservice teachers in Elementary School Methods I and II has been performed by the writer. Supervision of preservice student teachers in a 15 week student teaching placement has been fulfilled by the writer. The preservice student teachers have been instructed by the writer in an Education-Seminar during the student teaching time period.

CHAPTER II

STUDY OF PROBLEM

Problem Description

The writer found that most preservice teachers do not apply technology in classroom lesson planning. During the past three years, the writer has had innumerable preservice teachers in class who displayed a fear of technology. The cycle began because many of these students did not know the basic skills for word processing. Other students felt that multimedia programs were too complex and tedious to learn.

The ramifications of inadequate computer literacy were encountered with field placement cooperating teachers who perceived that they were unprepared to employ the use of new technologies in their planning practices. These cooperating teachers in the field placement did not have enough training in the application of technology and were not confident with

the usage of technology. Often, teachers felt that they would have done more harm to student achievement by modeling incorrect computer procedures and were reluctant to jeopardize student outcomes. Additionally, field placement schools did not always have the technologies available to be employed. This was problematic in urban schools, since many teachers were willing to continue with traditional methods of teaching rather than embrace and demand that funding be spent on new technological advances in the school for their minority students.

Teacher attitude was factored into this problem. Some teachers believed that they might damage the computer or become too frustrated and did not want to learn anything about computers. Computer manuals tended to scare individuals away with the complex language and use of technical terminology and had been a source of contention for those with an openness to computer literacy. Positive teacher attitudes sometimes became negative due to inadequate comprehension of uncomplicated skills. Anxiety and frustration led to apathy and ineffective technological development for teachers.

Teacher preparation courses did not provide a basic framework for preservice teachers that would have developed skills in word processing,

multimedia design and the applying of this knowledge and skill to lesson planning. The computer course required for preservice teachers did not teach the fundamentals of word processing and multimedia design in regard to lesson planning. The focus was on theory rather than application of skills for preservice teachers.

Problem Documentation

The evidence that supported the existence of the problem was gleaned from journal entries, a survey, a summary reflection for Elementary School Methods, lesson plans, and documentation of observations in field experience schools.

A survey of 40 preservice teachers showed that the majority had not attained basic word processing skills and were hindered by technology. Many preservice teachers were not even familiar with the terminology related to technology and were in need of further explanation to complete the survey. Preservice teachers did not cope with new technologies and became frustrated as noted through observation and verbal feedback. Many preservice teachers recounted difficulties with the use of technology and were content to utilize other older traditional methods and were not willing to take a risk with new technology.

In examining the written documentation of preservice teacher's journal entries, it was perceived that preservice teachers did not understand the capabilities of multimedia design and the relationship of lesson planning. Preservice teachers therefore, did not utilize available technology for assignments or presentations as indicated by the preservice teachers' lesson plans.

The writer documented through observational records that field placement schools did not model the use of computers in classroom lesson planning. Some school districts had one or two computers in the classroom and utilized computers for enrichment purposes or individual remediation. Other schools relied on the computer teacher to fulfill the technology need of the elementary school age child. Some school districts did allot funding to broaden the technology base within the school and some technological developments had taken place.

Causative Analysis

The causes of the problem stemmed from diverse reasons. Preservice teachers did not possess adequate skills for computer operation. Many preservice teachers did not have ample instruction in technology that was

applicable to learning experiences in the elementary classroom. Other preservice teachers had inadequate word processing skills.

Preservice teachers had preconceived notions of the complexity of using a computer. A number of preservice teachers had never used a computer. Some preservice teachers had only used an IBM computer for word processing with very basic commands. Others were only familiar with the features of the Macintosh computer and some only had knowledge of certain word processing programs.

Time management was problematic as preservice teachers often left assignments and presentations to the last minute, so there was insufficient time to utilize technological resources. The computer lab was restricted to certain hours and scheduled classes had priority privileges for usage. Preservice teachers were often left without a computer to use when they were in need.

Furthermore, preservice teachers were not required to implement technology in the elementary school methods course or in other education courses. Most preservice teachers did not use the technological skills they had been taught and did not remember how to use these skills after a short

period of time. Other preservice teachers did not use technological skills unless required.

Relationship of the Problem to the Literature

A survey of the literature suggested that others had been concerned with applying technology in the classroom. The various articles had dealt with the increased use of technology in the elementary schools and the limited use of technology by preservice teachers and classroom teachers. Teaching styles, informational resources, and delivery strategies have been affected by new learning information systems. Thomas, Taylor, and Knezak (1993) indicated that the International Society for Technology (ISTE) and the National Council for Accreditation of Teacher Education (NCATE) standards in 1990 required courses for computer instruction to be included in teacher education programs before certification. Willis (1992) found that preservice computer education and inservice education was very limited and did not meet the needs of teachers. The computer course offered to teachers must have had practical application. Harrington (1993) maintained that in this technological generation, teacher education programs should strive to prepare preservice teachers to use technology.

According to Zokowki (1992) colleges and universities have a responsibility to prepare preservice teachers for the future and must take a proactive stand in the utilization of technology. Riedl and Carroll (1993) mentioned that Impact North Carolina did change the field based experiences for preservice teachers by utilizing videoconferencing and electronic messaging systems. Impact North Carolina developed skills in preservice teachers who have had examples to guide them as they have obtained permanent teaching positions. Colleges and universities did become more aware that preservice teachers did need training in technology and some have added technological requirements to the education courses. Bruning (1992) noted that at Teachers College preservice teachers were required to add technology to lesson plans that were later implemented in the Burris Laboratory school.

Harrington (1993) maintained that in this technological generation, teacher education programs should strive to prepare preservice teachers to use technology. Soloway (1991) endorsed the integration of technology and learning as a wave of the future. Mc Namee (1992) spoke of technology as a challenge to present day educators who must be able to design interactive lessons for the inquiring mind of today's youth. These authors have inferred

that preservice teachers must be prepared to rise to this challenge and succeed with the integration of technology and learning. Shaner (1992) related that students must have training in technology to be successful and competent in the years ahead.

Means and Olson (1994) contended that teaching and learning today has demanded a variety of technological skills and that teachers must undertake new roles in the instructional practice. D'Ignazio (1991) disclosed that with multimedia learning the teacher must know about multimedia design and learn to make presentations that are instructionally sound and integrated. Again, the focus was placed on the technological training for preservice teachers. Riedl and Carroll (1993) expressed that those preservice teachers who are technologically literate would be able to assist their students better in a technology enriched curriculum. While literature confirmed that preservice teachers did not have adequate skills in technology it has seemed that very little has been done to rectify the situation.

Literature has documented the problem through an array of surveys and studies. The Office of Technology Assessment (1988) reported that the vast majority of current teachers and preservice teachers have had little

computer training. Scrogan (1989) stated that studies have shown that most teachers did want to learn more about computers but seemed to be unable to find training that was satisfactory. Individuals were willing to try new devices if they had had proper training that made them feel secure in their new skills. In addition, Fulton (1989) asserted that a survey conducted by the American Association of Colleges for Teacher Education noted that less than 1/3 of the students at 90 institutions felt they were adequately trained in the usage of technology in the classroom.

In a survey by Berger, Carlson, and Novak (1989) over 1,100 preservice teachers in Michigan indicated that 90% agreed that they wanted more experience using computers. Hurteau's (1990) survey of New York state teachers who were utilizing computers for instructional purposes, revealed that only 20% felt they had sufficient preservice computer training. The impact of training preservice teachers in technology will certainly advance the learning experiences of children in the elementary classroom.

A number of studies suggested a relationship between attitude and implementation of technology in the classroom (Savenye, Davidson, & Orr, 1991,1992; Sanders & Stone, 1986; Canning, 1989). Collis (1988) found that the main reason computers were not utilized in the classroom was due

to the fact that teachers perceived that computers did not provide distinct advantages over traditional methods of teaching. In order to effect change in instructional methods, teachers attitudes must coincide with the new methodology they are expected to utilize. Teachers must be convinced of the importance of new technologies through the application of these resources that will evoke change in their attitude and practice. Merten and Wang (1988) noted that teacher attitudes were imperative for the integration of computer based instruction in the elementary classroom. Woodrow (1989) and Hudiburg (1989) in two studies that related teacher attitude and the use of computers in the classroom found that attitude was a decisive ingredient.

Glenn and Carrier (1989) expressed that schools can be restructured, however, teachers attitudes toward technology and the use of technology for instruction was critical for the implementation of technology in the school curriculum. A favorable attitude and a willingness to develop a contemporary means of instruction for the betterment of all students was necessitated by this informational society. Koontz (1992) disclosed those preservice teachers that with a positive attitude toward the application and value of technology were more likely to use technology when they teach.

. Hadley and Sheingold (1993) found in a survey that teachers who used technology expected more from the students, were able to individualize instruction and developed student-centered classrooms. Frantianni, Decker and Korver-Baum (1990) emphasized that current hiring practices highlighted computer literacy as a requisite for hiring 3/4 of the administrators surveyed. The main goal of teachers, parents, administrators and business partnerships within the educational system is the maximizing of student learning through the employment of the most qualified teachers. Therefore, attention must be given to enhancing the learning potential through technology literate teachers. Hadley and Sheingold (1993) indicated in a survey that compared and rated the barriers of the past and present, that computer knowledge and skill was less of a barrier since instructional efforts were made to develop teachers technological literacy and abilities.

The causes brought forth in literature indicated that preservice teachers had not received the proper training in technology to apply technology to instructional planning and design. Beicher (1993) identified a couple of causes for the problem with technological literacy of preservice teachers as (a) there were problems in identifying the knowledge and skills required to be a computer literate teacher and (b) there was confusion in

dealing with the rapid changes in educational technology. Willis (1992) offered that educational systems and institutes of higher education should provide instruction and technical support that would be compatible with the application and usage of technological instruction in the schools. Mac Kenthum (1992) discussed the Learning Network program as a means of providing clarity, since it focused on integrating technology and instructional practices to augment the global perspectives of students. Gaining skills in technology can not wait until technology becomes stabilized. Technology and technological resources have continually grown and educators must decipher the changes and implement solutions. Hadley and Sheingold (1993) asserted that student achievement, as well as the desire to increase professional skills, did motivate and cause educators to develop skills.

Glenn (1993) contended that there were several reasons why proper technological training has not been effective for preservice teachers. First, preservice teachers had very basic skills and did not apply skills for instructional means. Secondly, preservice teachers' use of technology can be enhanced or stagnate depending on the technological level of the teachers and the technological resources of the school involved in the field placement.

Thirdly, the budget reductions were impacting spending on updating and adding subsidiary technological resources.

Most of the literature examined the effects of technology and the teacher in the classroom. However, with the increase of technology, school districts have begun to examine the attitude and behavior of the teacher concerning utilizing technology. Littauer (1994) expressed that the role of the teacher has changed to a facilitator role that was uncomfortable especially for teachers with insufficient computer training. Hancock and Betts (1994) noted that the largest barrier in the use of technology in the classroom was the insufficient endorsement teachers had for implementing technology into teaching and learning experiences.

The topical area touched upon in the writers search of literature included teacher education, restructuring curriculum, technology, preservice teacher training, and technological strategies. Research, and available information was invariably expanding and like technology, must be reviewed to determine the causes for inadequacies.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

The following goals and outcomes were projected for this practicum. To expand the preservice teachers' ability to understand and demonstrate the use of computers and new technologies in elementary school lesson planning is the writer's goal. The expectation is that preservice teachers will have the skill to operate a computer, computer applications and technological resources as a tool for learning and instructional practice.

Expected Outcomes

The following outcomes were charted for this practicum. At the end of the implementation, four distinct outcomes are expected.

Outcome 1: 15 out of 18 preservice teachers will recognize, value and believe in the advantage of technology in the elementary classroom especially in future lesson planning.

Outcome 2: 15 out of 18 preservice teachers will be able to develop word processing skills.

Outcome 3: 15 out of 18 preservice teachers will be able to actively participate in the experience of multimedia design.

Outcome 4: 15 out of 18 preservice teachers will be able to develop lesson plans for elementary classroom using technology.

Measurement of Outcomes

Measurement of Outcome 1: 15 out of 18 preservice teachers will endorse, and give credence to the benefits of technology in lesson planning in the elementary classroom. This will be measured by a questionnaire prepared by the writer. The standard of achievement will be 8 out of 10 questions are correct (see Appendix A).

Measurement 2: 15 out of 18 preservice teachers will acquire word processing skills. A checklist of word processing skills prepared by the writer will measure the preservice teachers ability. The standard of achievement will be that preservice teachers will correctly identify 8 out of 10 items (see Appendix B).

Measurement 3: 15 out of 18 preservice teachers will partake in the experience of multimedia design. Expectations for multimedia design will be

inscribed on a checklist formulated by the writer to measure the outcome. The standard of achievement will be that preservice teachers will correctly identify six out of eight items (see Appendix C).

Measurement 4: 15 out of 18 preservice teachers will create lesson plans for the elementary classroom utilizing technology. This will be measured by a checklist for the lesson plans that engage word processing and multimedia design. The standard of achievement will be that preservice teachers will correctly identify 8 out of 10 items (see Appendix D).

Discussion of Evaluation Instruments

A questionnaire was utilized to delve into the attitude of preservice teachers in regard to technologies in the classroom (see Appendix A). This questionnaire focused on the valuing and recognizing of technology. It communicated questions clearly and was completed in a time efficient manner.

The word processing checklist noted the knowledge and skills attained in word processing by preservice teachers (see Appendix B). This was designed so that the word processing skills in specific assignments would be given to all preservice teachers. This checklist provided a means to equally assess the preservice teacher in particular areas.

The multimedia knowledge and skills checklist highlighted the accomplishments of the elementary school methods student. This was especially devised to be a broad based checklist that illustrated competencies that required independent, hands-on integration of demonstrated processes and instructional materials. It also indicated the process toward the goal.

The preservice teachers lesson plan checklist characterized mastery in word processing and multimedia design by elementary school methods students. Identifying a certain number of items in the checklist determined if the expected outcomes had been achieved by the preservice teachers.

CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Solutions

Most preservice teachers did not apply computer technology in elementary school lesson planning. A number of solutions have been gleaned from the literature in regard to preservice teachers employing technology in lesson planning. Beichner (1993) recommended workshops or courses for word processing skills. Preservice teachers demonstrated word processing including pagination, changing fonts, size of print and insertions into the text. The students illustrated skills in the integration of technology by producing lesson plans for teaching. This provided for a practical application of skills that is often found to be inadequate in present computer courses for preservice teachers.

Todd (1993) suggested developing computer facets to all education courses. Instructional strategies and the content of education courses were

related to practical application within the education course. Particular objectives and computer skills were identified and applied to Foundations in Education, Classroom Management, Introduction to Reading, Language Arts Methods, Science and Social Studies Methods, and Reading Methods.

Sheingold and Hadley (1990) prepared an array of technological applications that would be related to basic multimedia design including graphics, sound and animation, word processing, instructional software and games. This array of technological applications guaranteed that preservice teachers had a multitude of computer experiences.

Colleges and universities, as well as school districts, did begin to focus attention on the growing need for training school personnel in the use of technology. Power and Brosnan (1992) noted that the Diocese of San Jose, California required that all teachers learn word processing and learn how to use an electronic grade book with more advanced courses to be offered after mastery of basic computer skills. Shaner (1992) mentioned the Pedergast-Weyer Academic Computer Training (PACT) workshops that are offered for preservice teachers and teacher allowing the teachers to meet with achievement after 21 hours of lab experience.

Description and Justification for Solution Selected

Technology, its implications in the elementary classroom and the role of the preservice teacher has impacted colleges, universities, and school administrators. It is important to assess, critique and ascertain the most appropriate solutions for the educational setting.

A review of the literature, indicated to the writer that incorporation of instruction in new technologies would be a viable solution to the problem. Harrington (1993) suggested the complete restructuring of courses for preservice teachers in order to advance knowledge and skills in computer utilization. In addition, technology can be relevant (Soloway, 1991) to content and instructional strategies.

The writer revised one section of the elementary school methods course to include basic computer skills and facilitate technological knowledge. Preservice teachers were instructed (Zokowki, 1992) in the capabilities, advantages and limitations of employing the use of the computer for lesson planning. Specific assignments were given that employed technological resources. Lesson planning (Shaner, 1992) that required the combination of word processing, and multimedia design skills were mandatory in the elementary methods course. Preservice teachers

through the employment of technological resources were better prepared and more confident in using technology in their classrooms. The technological knowledge and skills provided preservice teachers with more contemporary marketable skills for securing a teaching position. These solutions seemed to be achievable and were implemented during the 12 weeks of the practicum.

Report of Action Taken

The writer followed the 12 week plan introduced under the Description section. One of the changes to the practicum was the time allotment. Originally, the writer scheduled a two hour block to work with students. However, due to another class that requested the same time slot the writer's time was limited to one hour. Extra instruction was given to students when it was requested outside of the scheduled time frame.

The first student session focused on a) establishing a level of comfort, b) getting members input , and c) discussing the purpose, expectations and outcomes of this technology focus. Each student was presented with a spiral bound manual that was utilized during the technology class sessions. This manual that was developed by the writer included basic, uncomplicated directions for Microsoft Word in such areas as paragraphs, font, size of type,

spacing, margins, print, save, page numbers, spell check, thesaurus, shading, pictures, clip art, mailing labels, letters and resumes.

The second part to the manual provided clear directions for Microsoft PowerPoint in the domain of pick a look presentation, blank presentations, bulleted lists, text and clip art, transitions, build, slide show, slides, handouts and notes.

The third section of the manual included the assignments and two questionnaires. The preservice teachers were able to plan ahead by looking to the assignments. Some even practiced certain assignments before the due date to have a better grasp of the technological components.

A questionnaire (see Appendix A) was given to the elementary school method students to complete on valuing and recognizing technology. The questionnaire provided a timely response and was discussed after all members had completed the questionnaire.

The center point of this second session was building confidence and simple word processing skills. The preservice teachers were given a basic introduction to the computer and word processing skills. The elementary school methods students were able to locate and identify tool buttons needed to conclude upcoming assignments.

The writer made use of the technology manual to illustrate the capabilities of the computer and the preservice teachers modeled these capabilities through keyboarding and typing short paragraphs. The writer proceeded through the Microsoft Word section of the manual. Many elementary school methods students had difficulty with shading, pictures and clip art. Extra instructional time was given to these areas. All practice materials were complied in a portfolio.

The point of convergence for this third session was on utilizing Microsoft Word for an assignment following specific guidelines. Preservice teachers did set margins at 1.5 and page numbers to begin with the first page. The elementary school methods students placed their name in italics with Times New Roman font in size 14 type and the date in Arial font in size 12 type at the top of the paper. The preservice teachers did fix the line spacing for double spacing and wrote a short paragraph on a topic of their choice. The title of the paragraph was shaded and a picture or clip art was required on the paper. The writer gave explanations on the percentages of shading and how to enlarge or decrease the size of clip art or pictures. The elementary school methods students utilized the spell check and thesaurus as

a means of editing and revising. The writer served as a trouble shooter for individuals throughout this time period.

An unexpected event occurred during this session when the computers crashed and were shut down for twenty minutes. The writer utilized the blackboard in the computer lab and drew a computer with a toolbar and proceeded to explain step by step what they would do on a computer. Ultimately, when the computer power was restored, the students practiced what the writer had projected verbally and illustrated mastery on the checklist for word processing skills (see Appendix B).

The fourth session required the preservice teachers to be divided into smaller groups in order to have hands-on experience with video disks, CD-ROM's and application software. Many IBM compatible computers were used and two Macintosh computers. The elementary school methods students were able to utilize the Living Books, Encarta 95, Grolier's Encyclopedia, World Atlas, Cinderella, Time Table of History, Cosmic Osmo, Beethoven, Visual Almanac, and the National Gallery of Art. One student brought in Explorapedia and most of the students had an opportunity to view this CD-ROM disk and were able to compare and contrast this interactive multimedia encyclopedia with the Grolier's

Encyclopedia and Encarta 95. Explorapedia is unique because it uses a child's voice instead of an adult voice. This CD-ROM disk would be very appealing for children ages 6-10. The students and the writer rated this CD-ROM disk as the best viewed.

The preservice teachers were delighted and stunned at the capabilities open to them. Several preservice teachers were so intrigued that they even went to their field placement schools and borrowed Reader Rabbit, Where in the World is Carmen Sandiego?, Math Blasters, Oregon Trail and Fraction Munchers. Other elementary school methods students immediately signed up to visit the multimedia lab after class hours.

During week five, preservice teachers completed a synopsis of software that had been demonstrated the week before. The elementary school methods students were asked to highlight two that they would consider for a lesson. The preservice teachers were able to match many of the CD-ROM disks to content areas and wanted to show samples to classmates and field placement cooperating teachers. The biggest problem was matching CD-ROM disks for the Macintosh and IBM computers. Many of the more applicable CD-ROM disks only applied to the Macintosh that did not have a printer attached. Only the faculty Macintosh had a printer

attached. With some negotiation with the Audio Visual Director, the writer was able to reserve time for several groups of elementary school methods students to utilize the faculty Macintosh computer and printer.

The focal point of the sixth session was on creating a slide show by elementary school methods students. This was the first time the preservice teachers had used the Microsoft PowerPoint program. Many of the elementary school methods students seemed overwhelmed and somewhat reluctant to begin this process. The writer tried to relax the group by relating disastrous experiences that the writer had while creating slide shows. The writer noticed a more positive shift in attitude and body language. The writer also conveyed that this was to be a learning experience and all preservice teachers could master this program .

The manual designed for Microsoft Power Point was very helpful and allowed the students a point of reference when they wanted to double check a procedure. The elementary school methods students seemed to hang on every word and followed the directions of the writer as if their life depended on it. The process was slow but enabled the preservice teachers to get comfortable with the steps they needed to proceed with in creating a slide show. By the end of the session, the writer sensed that the students were

extremely satisfied and energized by their creation of three slides for a slide show. Many students requested a print out of what they had created and did so. Feedback from other faculty members led the writer to believe that the elementary school methods students were displaying and discussing in other classes what they had accomplished with the PowerPoint program.

The writer prepared ahead a demonstration disk that the elementary school methods students could view and click on to areas that would highlight the steps and tools in the Microsoft PowerPoint program. Many preservice teachers requested to borrow the disk either to view or to copy. This demonstration disk was more in demand than the writer expected.

The bullets and the transitions were confusing until they understood the difference in how they were applied to the slide show during the seventh session. The students were able to catch on after clarification. Some student's disks were not formatted and the program they thought they had saved was not. Therefore, they had to redo the three slides and then add bullets in build and the transitions.

Word Art was shown to the students as an additional skill. The students were interested in the variety of shapes and how to apply word art

to their beginning slide. At this time, a checklist was employed for multimedia design skills (see Appendix C).

The elementary school methods students selected a partner to work with on the slide show and decided on a topic in either Math, Science or Social Studies during week eight. They began their slide show with an introductory slide with the title and authorship. This introductory slide was the most complex, since many wanted to use Word Art and pictures. The correct steps in the process were difficult for them to remember, however, after several attempts the students were very adept.

A new color printer was added to the computer lab, so the writer showed the students how to change the type to color to coordinate with the illustrations or personal choice. The students thought the color added a new dimension to their work. The writer instructed the students to utilize the color printer before the computer lab decided to charge for color copies.

The elementary school methods students during the ninth session continued to add slides to their slide show. Some students had several slides completed and printed out a color copy of their incomplete slide show. The color printed outputs appeared very professional. The enthusiasm and incentive to work faster was apparent. The only drawback was the slow

speed of the color printer. Many students had to go on to their next class without receiving what they had printed. The writer obtained the copies and gave them to the students the next day during their field placement. The students were so proud of their accomplishments. The writer wishes a camera had been available.

The students proceeded to work on the slide show in the tenth week. Several partners requested the writer's assistance after the specified class lab time. Some were anxious to finish while others were a little unsure of themselves. The writer noticed that the slide show was progressing smoothly and had seen computer and graphic application in other elementary methods assignments without requesting this application. Therefore, the writer did observe what a small amount of computer knowledge and application could attain.

The technology skills questionnaire (see Appendix E) was completed by the elementary school methods students in the eleventh week. The replies were very favorable. The most common difficulty was the amount of time needed for the completion of the slide show and lesson plan. A number of students wrote an additional, personal note to thank the writer for taking the

time to engage them in technology and provide them with the basic knowledge needed to be computer literate.

The final multimedia/word processing projects were outstanding and the checklist (see Appendix D) indicated high achievement of the integration of technological skills and lesson planning. Each slide show was unique and illustrated the personality of the student creators. The writer was able to secure time, an LCD panel projector, and computer, so the students could view each others slide show in a large viewing area. All of the students were very proud and very willing to share their lesson plans and slide show.

CHAPTER V

RESULTS, DISCUSSIONS AND RECOMMENDATIONS

Results

Many preservice teachers do not apply technology in classroom lesson planning. The goal of the practicum was to expand the preservice teachers' ability to understand and demonstrate the use of computers and new technologies in elementary school lesson planning.

The solution strategies selected included a 12-week technology lab for preservice teachers. The following outcomes were projected:

Outcome 1 : 15 out of 18 preservice teachers will recognize, value and believe in the advantages of technology in the elementary classroom, especially in future lesson planning. The evidence from the questionnaire (see Table 1) completed by 18 preservice teachers indicated that 18 of the participants met this outcome. Certain questions were noted in Table 1 that particularly focused on the valuing, and recognition of technology. The entire questionnaire was placed in the appendix (see Appendix A).

Table 1. Valuing and Recognizing Technology Questionnaire Responses

Item	Response	n
1. I would like to utilize technology in the classroom.	Agree	18
	Disagree	0
	Unsure	0
3. Using technology is an effective way to individualize student instruction.	Agree	18
	Disagree	0
	Unsure	0
5. Teachers need to integrate technology into learning for future instructional strategies.	Agree	18
	Disagree	0
	Unsure	0

Note. n = 18.

Outcome 2 : 15 out of 18 preservice teachers will develop word processing skills. The evidence from the checklists of word processing skills (see Table 2) indicated that 18 preservice teachers met this outcome.

Table 2. Word Processing Checklist Data

Item	Performance	n
1-3. Ability to choose commands	Mastery	18
	Incompetence	0
4-5. Ability to check spelling and utilize thesaurus	Mastery	18
	Incompetence	0
6-9 Ability to use formatting for shading, pagination and auto correct	Mastery	18
	Incompetence	0
10. Ability to save document	Mastery	18
	Incompetence	0

Note. n = 18.

Outcome 3 : 15 out of 18 preservice teachers will actively participate in the experience of multimedia design. The evidence from the checklists for multimedia design (see Table 3) indicated that 18 preservice teachers were able to achieve the expectations and met this outcome.

Table 3. Multimedia Knowledge and Skills Checklist Data

Item	Performance	n
2. Evaluation of three types of educational software	Mastery	18
	Incompetence	0
6. Developed a slide show with bullets and transitions	Mastery	18
	Incompetence	0
7. Created and organized an instructional design utilizing color and graphics	Mastery	18
	Incompetence	0

Note. n = 18.

Outcome 4 : 15 out of 18 preservice teachers will develop lesson plans for the elementary classroom using technology. The evidence from the checklists for lesson planning (see Table 4) that engaged word processing and multimedia design indicated that 18 preservice teachers successfully achieved this outcome. The preservice teachers selected topics in the content areas of science and social studies. Some students used these lesson plans and slide shows in their field placment schools.

Table 4. Preservice Teachers Lesson Plan Checklist Data

Item	Performance	n
1. Goals and objectives were stated	Mastery	18
	Incompetence	0
6. Provided for recall of learning concept in slide show	Mastery	18
	Incompetence	0
10. Submitted lesson plans on due date	Mastery	18
	Incompetence	0

Note. n = 18.

Discusssion

Outcome one was successful since 15 preservice teachers recognized, valued and believed in the benefits of technology in the elementary classroom, especially in future lesson planning. A possible explanation of why this outcome was met is that the students were able to discuss technology prior to the questionnaire (see Appendix A). This discussion included the types of technology used in field placements, the type of computer they owned, and the software they have utilized. Lecture and video presentations given by the writer highlighted how technology is used in classrooms today and examples of local school district investment in technology were mentioned to the preservice teachers.

Collins (1991) has noted that technology has made its way into the schools as a reinforcement tool or for remediation and has been found to be

very compatible with teaching strategies. Emphasis has been given nationally, internationally, and locally in regard to the benefits of technology. The information highway has grown at such a large rate that it is difficult to keep up with the new technology available. Braun (1993) has asserted that we must be future oriented and supply the educational community with the tools necessary to succeed.

Outcome two was mastered by 18 preservice teachers that connoted on a checklist (see Appendix B) that they had developed word processing skills. One explanation for the positive outcome results was that the preservice teachers were anxious to learn word processing and wanted to apply this skill to other content area assignments. Additional computers with a unified software package had been installed on all campus computers and the students had to learn the system in order to utilize the new computers and programs. An unexpected outcome was that due to the skills acquired, many of the preservice teachers purchased home computers.

Ehley (1992) has contended that availability of computers is necessary for change. For effective utilization of technology, equipment must be accessible. The uniformity furnished by a software package allows the student to become proficient in that program and may later transfer these

skills to other programs. Ehrmann (1994) has focused attention on educating graduates for life-long learning with an openness and interest in technology.

Outcome three was achieved by 18 preservice teachers who actively participated in the experience of multimedia design. These preservice teachers demonstrated their abilities in instructional design, achieved standard measurement as noted by a checklist (see Appendix C), and provided other students with assistance. The students enjoyed this segment the best and utilized multiple options in selecting educational software and preparing their slide shows.

Collins (1991) has suggested that tools and simulation in multimedia have permitted students to integrate curricular materials. The teachers need to become a facilitator for the students who are actively learning and manipulating information. In order for the teacher to be a facilitator, the teachers must have technological experience. Ehley (1992) recommended hands-on experience and redesigning courses to use technology as a teaching tool. Ehrmann (1994) stressed that higher education programs should foster student capabilities in technology.

Outcome 4 was fulfilled by 15 preservice teachers who developed lesson plans for the elementary classroom using technology. The achievement of this outcome was illustrated by the checklist (see Appendix D) and the submission of the lesson plans with a multimedia slide show. All 18 preservice teachers did an outstanding job developing their slide shows and lesson plans. A color print out of the slide shows were exceptional and gave the students a clearer understanding of what they had completed. The preservice teachers' slide shows were presented to the class and the students were very proud of their work and were applauded by fellow classmates. A number of the students asked if copies of the lesson plan and slide show could be made, so that they could utilize these lessons in the classroom in future years.

Ehley (1992) has endorsed the idea of integrating technology as an educational tool. Ehrmann (1994) has envisioned technology as a centerpiece for a learning community. Becker (1986) expressed that computers and networking are prevalent in society and have ramifications for education. The cost of computers, software and networking has declined and many feel technological resources are a good investment in future generations. Braun (1993) indicated the cost of dropouts in the United

States is $1000 billion and for half that amount, students could be provided with all of the latest technological tools.

In this practicum all of the outcomes were achieved. Preservice teachers a) valued, recognized, and believed in the benefits of technology, b) acquired word processing skills, c) experienced and constructed multimedia design, and d) integrated word processing and multimedia design with lesson planning.

Recommendations

The writer plans to make several changes in implementing this practicum in the future. The following recommendations can be used in the writer's workplace.

1. The amount of time should be increased for preservice teachers to develop technological skills and knowledge.

2. The word processing skills segment would be presented in the Fall semester.

3. Graphics and word art would be presented in the Fall semester.

4. Additional computers, printers and CD's need to be purchased for the growing number of students involved with technology.

5. Multimedia design and software evaluations would be presented during the Spring semester.

6. Lesson planning utilizing word processing, word art and graphics would proceed throughout the Fall and Spring semesters.

Dissemination

The practicum results will be disseminated to other colleagues in several ways. The writer has attended a meeting of the New Programs and Enrollment Task Force on campus to contribute information about the practicum and provide input for future planning in technology. Positive feedback was received by the writer from this Task Force and the results of this practicum will be available for this Task Force .

The writer submitted the computer lab booklet and assignments to the Academic Dean and Department Chairperson for perusal. Student slide shows, lesson plans and questionnaires were available for the Academic Dean and Department Chairperson. These individuals have complimented the writer on advancing the integration of technology for preservice teachers and emphasizing the current school theme "An Invitation To Tomorrow".

References

Becker, H. (1986, June). Instructional uses of school computers: Reports from the 1985 national survey. Newsletter of the Center for Social Organization of Schools. Baltimore: Johns Hopkins University.

Beichner, R. (1993). Technology competencies for new teachers: Issues and suggestions. Journal of Computing in Teacher Education, 9 (3), 17-20.

Berger, C., Carlson, E., & Novak, D. (1989). Handbook for Preservice Technology Training. Ann Arbor: The University of Michigan.

Braun, L. (1993, May). Educational technology: Help for all the kids. The Computing Teacher, pp. 11-15.

Brunning, M. (1992). VIS: Technology for multicultural teacher education. Tech Trends , 37 (1), 13-14.

Canning, C. (1989, March). Adoption of computing: the experience of six successful teachers. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA.

Collins, A. (1991). The role of computer technology in restructuring schools. Phi Delta Kappan, pp. 440-447.

Collis, B. (1988). Computers, curriculum and whole-class instruction. Belmont, CA: Wadsworth.

References

D'Ignazio, F. (1991, April). A new curriculum paradigm: The fusion of technology, the arts, and the classroom instruction. The Computing Teacher, pp. 54-55.

Ehley, L. (1992). Building a vision for teacher technology in education. (Report No. SP-034-071). Milwaukee,WI: Alverno College, (ERIC Document Reproduction Services No. ED 350278

Ehrmann, S. (1994). Making sense of technology. Change, 26 (2), 34-38, 52-53.

Frantianni, J., Decker, R., & Korver-Baum, B. (1990). Technology: Are future teachers being prepared for the 21st century ? The Journal of Computing in Teacher Education , 6 (4), 15-23.

Fulton, K. (1989). Technology training for teachers: A federal perspective. Educational Leadership , 24 (3), 12-17.

Glenn, A. (1993, February). Teacher education. Electronic Learning, pp. 18-19.

Glenn, A., & Carrier, C. (1989). A perspective on teaching technology training. Educational Technology, 24 (3), 7-11.

References

Hadley, M., & Sheingold, K. (1993). Commonalties and distinctive patterns in teachers' integration of computers. American Journal of Education , 101 , 261-315.

Hancock, V., & Betts, F. (1994). From lagging to the leading edge. Educational Leadership, 51 (7), 24-29.

Harrington, H. (1993). The essence of technology and the education of teachers. Journal of Teacher Education, 44 (1), 5-15.

Hudiburg, R. (1989). Psychology of computer use: XVII. Measurement techno-stress: Computer-related stress. Psychological Reports, 64, 767-772.

Hurteau, J. (1990). Perceived needs of computer training for educators in New York State. Unpublished master's thesis, State University of New York College at Oswego, NY.

Koontz, F. (1992). An assessment of teacher trainees' attitudes toward selected instructional media. Proceedings of Selected Research and Development Presentations at the Convention of the Association for Educational Communications and Technology and Sponsored by the Research and Theory Division, 2, 1-16.

References

Littauer, J. (1994). A "How to..." on using courseware in the classroom. T.H.E. Journal, 22 (1), 53-54.

Mac Kenthun, C. (1992, February). Linking students in global communications. Momentum, pp. 44-46.

Mc Namee, C. (1992, February). Teachers and learners in the technological age. Momentum, p. 3.

Means, B., & Olson, K. (1994). The link between technology and authentic learning. Educational Leadership, 51 (7), 15-18.

Mertens, D., & Wang, Z. (1988). Attitudes towards computers of preservice teachers of hearing-impaired students. American Annals of the Deaf , 133 (1), 40-42.

Office of Technology Assessment. (1988). Power on! New tools for teaching and learning, [Summary] (GPO Stock No. 052-003-01125-5). Washington, DC: U.S. Government Printing Office.

Power, C., & Brosnan, T. (1992, February). The future is now. Momentum, pp. 42-43.

Riedl, R., & Carroll, S. (1993). Impact North Carolina: 21st century education. T.H.E. Journal, 21, (3), 85-88.

References

Sanders, J., & Stone, A. (1986). The neuter computers: Computers for girls and boys. New York: Neal-Schuman.

Savenye, W., & Davidson, G., & Orr, K. (1991, April). Preservice teachers' attitudes and anxiety towards computers in a computer literacy course. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Scrogan, L. (1989). The OTA Report: Teachers, training and technology. Classroom Computer Learning, 9 ,80-84.

Shaner, L. (1992, February). PACT: The 21 hour success story. Momentum, pp. 56-58.

Sheingold, K. & Hadley, M. (1990). Accomplished teachers: Integrating computers into classroom practice. Center for Technology in Education. NY: Bank Street College of Education.

Soloway, E. (1991, April). Learning in the 90's: New tools, new ideas. Proceedings of the Prodigy Forum.. Forum conducted at the New York Public Library, New York.

References

Thomas, L., Taylor, H., & Knezek, D. (1993). National accreditation standards impact teacher preparation. T.H.E. Journal, 21 (2), 62-64.

Todd, N. (1993). A curriculum model for integrating technology in teacher education courses. Journal of Computing in Teacher Education, 9 (3), 5-11.

Willis, J. (1992), Educational technology: Issues and innovations. Computers in the Schools, 9 (1), 81-105.

Woodrow, J. (1989). Teachers' knowledge of educational applications of computers. Journal of Computers in Mathematics and Science Teaching, 8, (4), 31-38.

Zokowki, A. (1992, February). Rethinking catholic education: A dialogue. Momentum, pp. 24-27.

APPENDIX A

QUESTIONNAIRE ABOUT TECHNOLOGY

QUESTIONNAIRE ON VALUING AND RECOGNIZING TECHNOLOGY

Name: Date:

Please **circle** the response that accurately reflects your thinking.

Agree 1 Disagree 2 Unsure 3

1. I would like to utilize technology in the elementary class.

1 2 3

2. I feel the use of computers is not just another fad.

1 2 3

3. Using technology is an effective way to individualize student instruction.

1 2 3

4. The teacher's role in a technology enriched classroom is that of facilitator.

1 2 3

5. Teachers need to integrate technology into learning for future instructional strategies.

1 2 3

6. A positive attitude towards technology increases the probability of a teacher using technology in the classroom.

1 2 3

7. Preservice teachers knowledge and skills in technology would increase through computer training geared to application in the elementary classroom.

1 2 3

8. Preservice teachers that are exposed and utilize technology in their field placement schools are more confident using technology.

1 2 3

9. Education courses should require the use of technology to develop technological skills.

1 2 3

10. Preservice teachers should have knowledge and skills in multimedia design for instructional application in the elementary classroom.

1 2 3

Preservice Teachers will complete this questionnaire on valuing and recognizing technology as it applies to them.

APPENDIX B

WORD PROCESSING SKILLS CHECKLIST

WORD PROCESSING SKILLS CHECKLIST

Name: **Date:**

Preservice teachers will demonstrate knowledge and skills in:

1._____ Changing fonts and type

2._____ Setting margins and spacing

3._____ Inserting and deleting text

4._____ Ability to use spell check

5._____ Ability to utilize the thesaurus

6._____ Format text using the underline, italic and bold button

7._____ Pagination

8._____ Ability to use shading

9._____ Ability to use auto correct

10._____ Saving data on a disk

The writer will utilize this checklist to assess the word processing skills demonstrated through an assignment given to preservice teachers.

APPENDIX C

MULTIMEDIA KNOWLEDGE

AND SKILLS CHECKLIST

MULTIMEDIA KNOWLEDGE

AND SKILLS CHECKLIST

Name: Date:

Preservice teachers will demonstrate knowledge and skills in:

1. _____ Hands-on experience with video discs and CD-ROM's
2. _____ Evaluating three types of educational software
3. _____ Selecting an appropriate template in blank presentation and correct landscape
4. _____ Adding bullets and transitions
5. _____ Utilizing word art
6. _____ Sharing equal responsibility developing slide show with partner
7. _____ Creating a sequenced and organized instructional design for an effective lesson
8. _____ Ability to save and print multimedia presentation

The writer will make use of this checklist to assess the multimedia knowledge and skills developed in a presentation by preservice teachers.

APPENDIX D

PRESERVICE TEACHERS

LESSON PLAN CHECKLIST

PRESERVICE TEACHERS LESSON PLAN

CHECKLIST

Name: Date:

Items checked identify mastery.

1. _____ Content area and grade level are listed.
2. _____ Instructional objectives and goals stated.
3. _____ Included extension activity.
4. _____ Choice of software is integrated into learning concept appropriately.
5. _____ Procedure organized with clarity.
6. _____ Provided for recall of learning concept.
7. _____ Provided a hands-on activity.
8. _____ Expectations and objectives are appropriate for grade level and content.
9. _____ Included student assessment procedure.
10. _____ Submitted lesson plans on due date.

The writer will use this checklist to identify mastery in the four lesson plans submitted by preservice teachers.

APPENDIX E

CULMINATING TECHNOLOGY

QUESTIONNAIRE

TECHNOLOGY SKILLS QUESTIONNAIRE

FOR PRESERVICE TEACHERS

Name: Date:

Preservice teachers please complete the following questions.

1. List 5 new skills in technology that you have learned.

2. List 3 things that were difficult for you in preparing the 4 lesson plans incorporating word processing and multimedia design.

3. Describe 3 technological areas that you found most beneficial.